Communications Canada

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Spectrum Management

Client Procedures Circular

ENVIRONMENTAL ASSESSMENT PROCESS ASSOCIATED WITH SPECTRUM MANAGEMENT ACTIVITIES

Canada

Aussi disponible en français – CPC-2-0-03

Client Procedures Circulars describe the various procedures or processes to be followed by the public when dealing with the Department of Communications. The information contained in these circulars is subject to change without notice. It is therefore suggested that interested persons consult the nearest district office of the Department of Communications for additional details. While every reasonable effort has been made to ensure accuracy, no warranty is expressed or implied. As well, these circulars have no status in law. Additional copies of this or other circulars in the series are available from any office of the Department.

Comments and suggestions may be directed to the following address:

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Attention: DOSP

Introduction

In December 1989, the Federal Court handed down a decision stating that all federal government departments and agencies must conduct environmental assessments of all their activities. The Department of Communications, in consultation with the Federal Environmental Assessment Review Office (FEARO) and other agencies, has developed environmental assessment procedures for its spectrum management activities.

Principle

All Canadians have a right to expect that the Department of Communications will exercise its spectrum management functions with due regard for the environment.

Mandate

The *Radiocommunication Act*, section 5, states that the Minister may take into account all matters relevant to radiocommunication authorizations, including environmental assessment.

The requirement for determining environmental impact is established in section 3 of the *Environmental Assessment and Review Process Guidelines Order*. Therefore, in carrying out its spectrum management activities, the Department must ensure that environmental assessments are conducted.

Policy

Before issuing an authorization in accordance with the *Radiocommunication Act*, the Department will ensure that environmental effects and municipal or land-use authority concerns have been considered.

Process Overview

In assessing the environmental effects connected with a proposal for a radio authorization, the Department will:

- ensure that the proposal meets Health and Welfare Canada's Safety Code 6, which specifies maximum non-ionizing radiation (NIR) limits;
- ensure that the applicant has consulted as required with the local municipality or land-use authority regarding antenna structures; and

- identify and address any other environmental effects of the application under review in accordance with the *Environmental Assessment and Review Process Guidelines Order*.

While all environmental and consultation requirements will be addressed in the licensing process, it is expected that this will result in only minor procedural changes for those dealing with the Department.

Information Required from Applicants

Applicants for a licence or certificate will be expected to provide sufficient information for an assessment of environmental impact to be conducted by the Department. The annexes listed below, which are included with this document, detail the information, policies and procedures related to the environmental and municipal or land-use authority consultation process.

Annex A – contains a table detailing the environmental information that must be included with a request for a radio authorization.

Annex B – outlines the Department's policy on consultation with municipal and land-use authorities on antenna structures and contains an example of the consultation process attestation which must be submitted by the applicant where required.

Annex C – outlines the method for calculating minimum safe distances for non-ionizing radiation limits for the general public in accordance with Safety Code 6.

Annex D – contains an example of the preliminary environmental information which must be submitted by the applicant where required.

Although the environmental information requested in **Annex D** will usually be sufficient to assess environmental impacts, applicants should be aware that, in some circumstances, further information may be requested before the licence is issued.

Results of Environmental Assessment

Because of the power levels authorized and the types of installations proposed, the initial assessment process will normally determine that most radio stations have an insignificant effect upon the environment. Once the environmental impact is identified as insignificant,

the Department will process and issue the radio authorization in accordance with its standard procedures.

Occasionally, when significant effects are discovered, mitigation may be a practical alternative in order to render them insignificant. Mitigation can take many forms, including relocating the antenna, painting the antenna structure to reduce the visual impact, installing smaller structures instead of one large structure or permitting construction within a certain time frame.

Where appropriate, the Department will list the mitigation measures as conditions on the radio authorization. Failure by the applicant to take these mitigation measures may result in revocation of the authorization.

On rare occasions, the initial assessment may determine the effects upon the environment to be significant and unmitigable. In such cases, the Department shall follow the provisions of the *Environmental Assessment and Review Process Guidelines Order* in reaching its final decision.

Annex A

MINIMUM ENVIRONMENTAL AND MUNICIPAL OR LAND-USE AUTHORITY CONSULTATION INFORMATION THAT MUST ACCOMPANY A REQUEST FOR A RADIO AUTHORIZATION

This table lists the minimum information that must accompany all applications for a radio licence, a radio operator's certificate, or an equipment type-approval or type-acceptance certificate. The column on the left lists the various types of radio authorization applications while the right column lists the minimum environmental and municipal or land-use authority consultation information that must accompany the application.

1. Radio Station Licences

Application for Licence to Install and Operate a Radio Station in Canada (Form 16-16). (This is the application form for land, coast and earth stations. The required environmental information is also necessary for those applying for these types of stations, but not using Form 16-16.)

a. All applicants must submit a consultation process attestation with the application. (See **Annex B**.)

b. If the effective radiated power (ERP) of a single antenna, or the cumulative ERP of an antenna farm or multi-coupled site, is less than 200 watts and the general public will not be exposed to the radiating antenna at a distance of less than 6 metres, indicate this on the form entitled *Radio Licence Application Supplement – Preliminary Environmental Information* (**Annex D**). If the above conditions cannot be met, Safety Code 6 calculations are required (**Annex C**).

c. All applicants must complete the form entitled *Radio Licence Application Supplement – Preliminary Environmental Information* and submit it with Form 16-16. (See **Annex D**.)

Mobile Radio Station Licence Application (Form 16-21)	**a.** No information required other than that required for completion of the application form.
Application for Licence to Install and Operate a Radio Station in an Aircraft Registered in Canada (Form 16-39)	**a.** No information required other than that required for completion of the application form.
Maritime Mobile Radio Station Licence Application for a Voluntarily Fitted Ship (Form 16-844)	**a.** No information required other than that required for completion of the application form.
Application for Licence to Install and Operate a Transmitting and Receiving Station on Board a Compulsorily Fitted Ship Registered or Licensed in Canada (Form 16-939)	**a.** No information required other than that required for completion of the application form.
Application for Unprotected TV and Radio Receive Only Earth Station (TVRO) (Form 16-894)	**a.** If not part of a broadcasting undertaking, see requirements for Form 16-16. **b.** If part of a broadcasting undertaking, applicants should refer to the appropriate documents issued by the Director General, Broadcasting Regulation.
Amateur Radio Station Licence Application (Form 16-897)	**a.** Amateur licensees must comply with provisions articulated in **Annex B** regarding the municipal or land-use authority consultation procedures but need not submit an attestation form.

	b. Amateur installations must comply with non-ionizing radiation limits in accordance with Safety Code 6 (**Annex C**) and the environmental concerns addressed in **Annex D**.

2. Radio Operator Certificates

Application for Radio Operator's Certificates (Excluding Radio Amateur's Certificates) (Form 16-900)	**a.** No information required other than that required for completion of the application form.
Application and Report for Amateur Radio Operator's Certificate (Form 16-901)	**a.** No information required other than that required for completion of the application form.

3. Equipment Certification

Terminal Equipment Certification / Testing Application and Agreement (Form 16-828)	**a.** No information required other than that required for completion of the application form.
Radio Equipment Certification / Testing Application and Agreement (Form 16-860)	**a.** No information required other than that required for completion of the application form.

4. Broadcasting Certificates

a. Applicants should refer to the appropriate documents issued by the Director General, Broadcasting Regulation.

Annex B

POLICY FOR CONSULTATION WITH MUNICIPALITIES OR LAND-USE AUTHORITIES ON ANTENNAS AND ANTENNA-SUPPORTING STRUCTURES

Introduction

The Department of Communications believes that local concerns related to aesthetics or other land-use considerations are important to the community, and that municipal or land-use authorities should have the opportunity to influence the location of radiocommunication antenna towers within their boundaries.

In recognition of local concerns, the Department has instituted consultation procedures to ensure that municipal or other land-use authorities have a mechanism with which to make known their views regarding individual radio licence applications.

The Department of Communications believes that the aspects of radio systems which concern local authorities are best dealt with in a spirit of cooperation based on full and open disclosure of the facts surrounding the radio licence application in question, and on early consultation between the applicant and the local authority. While respecting the federal mandate for the installation and operation of radiocommunication systems in Canada, the consultation process provides an opportunity for local authorities to have their land-use and aesthetic concerns recognized, and where possible, accommodated in the siting of radiocommunication antennas and their support structures.

This annex describes the consultation procedures to be followed by radio licence applicants who wish to establish a new radio station or to make changes to an existing station involving either the station's antenna or its supporting structure.

Responsibilities

The Department's licensing process includes a procedure which requires radio station licence applicants to consult with municipal or other land-use authorities to give them an opportunity to comment on a proposed antenna structure and site.

Consultation with local authorities is also encouraged for radio station operators who wish to erect antennas or establish antenna-supporting structures associated with those classes of stations for which the Department does not authorize installations – for example, Amateur and General Radio Service (GRS) stations, private receiving stations, licence-exempt TVRO dishes, and other similar types of radio stations.

Within this procedure, the Department, the radio licence applicant and the local land-use authority each has an important role to play. The applicant is responsible for consulting with the appropriate land-use authority to provide that authority with an opportunity to comment on the proposed antenna structure and site. The local land-use authority's role is to consider the implications of the proposed antenna structure and site, and make known to the applicant its views and those of the individuals it represents.

The Department expects licensees and applicants for radio station licences to address the concerns of the community and consider all reasonable alternatives put forward by the local authority. Radio users and the local authority are required to carefully consider each other's requirements and present alternatives which mitigate reasonable concerns, yet do not unduly prohibit the installation or operation of the proposed radio facility. If the land-use authority and the applicant are unable to arrive at an agreement, it is the responsibility of the applicant to provide the Department with a written submission detailing all actions taken to address the concerns of the municipality. As well, to allow full consideration of the municipal or land-use authority's position, this body should provide a written record to the Department stating the alternatives proposed to the radio licence applicant regarding the antenna structure or site.

The Department of Communications' responsibility is to ensure its policies and the consultation process are understood by radio licence applicants and local governments or other land-use authorities, and, should an agreement not be reached, to review the alternatives proposed by the municipality or land-use authority and the actions taken by the applicant to respond to all reasonable local concerns. Then, under the Minister of Communications' mandate to foster the orderly development of communications for all Canadians, the Department must render a final licensing decision.

Process

Prior to the submission of a radio licence application for a proposed radio system requiring the erection or modification of antenna and antenna-supporting structures, the applicant must consult (or assume the responsibility for not consulting and the possible consequences thereof) with the local municipal or land-use authority. The applicant must endeavour to comply with appropriate by-laws and regulations and obtain the necessary approvals. Failure to do so could result in a delay in issuance of a radio licence, refusal to issue such a licence, or withdrawal of such a licence.

All applicants for land or coast station radio licences must complete and submit a signed *Antenna and Antenna Structure Attestation* (see example included with this annex) to the effect that the municipality or land-use authority concurs with the proposed installation.

A copy of this attestation or equivalent shall accompany each application form for new stations or for amended stations where the changes affect the antenna and antenna-supporting structure.

An *Antenna and Antenna Structure Attestation* is not required for those classes of stations for which the Department does not authorize specific installations – i.e., amateur and licence-exempt systems, including General Radio Service (GRS) systems, private receiving stations, TVRO dishes, and other similar types of radio systems. However, if the operation of this type of radio station requires the installation or modification of an antenna-supporting structure or tower which may lead to local objections relating to the location of the structure or other land-use concerns, the Department of Communications encourages these radio station operators to consult with the municipality or land-use authority responsible for the area in which the antenna-supporting structure will be erected or modified. Failure to notify and consult with the municipality or appropriate land-use authority could result in the structure having to be removed or altered.

The following radio licence applications will be processed according to standard licensing procedures:

a) those applications where the applicant has indicated on the *Antenna and Antenna Structure Attestation* that concurrence with the applicant's proposal has been obtained from the municipal or land-use authority; and

b) those applications where the applicant has indicated on the *Antenna and Antenna Structure Attestation* that the proposed structure or modification is insignificant in the context of the area or location.

If the municipality or land-use authority informs the applicant of an objection to a proposal, authority to operate the station in question will be withheld for a reasonable period to give the municipality or land-use authority and the applicant time to reach an agreement. While sufficient time will be allotted for review of the proposal by the local authority and for negotiations with the applicant, the Department expects that the consultation process will not unduly delay the licensing process.

Sample Attestation Form

ANTENNA AND ANTENNA STRUCTURE ATTESTATION

I am aware of the requirement for consultation with the municipal/land-use authority within whose jurisdiction the antenna-supporting structure(s) for the station located at _____° _____' _____" north latitude and _____° _____' _____" west longitude will be installed, and in accordance with this requirement:

A. ____ I have consulted with the appropriate municipal/land-use authority and have obtained their concurrence.

B. ____ I have consulted with the appropriate municipal/land-use authority and await their comments.

C. ____ I have not consulted with the appropriate municipal/land-use authority regarding this installation, as I believe that the structure(s) or the change proposed thereto is insignificant in the context of the area or location, and I realize that I may have to modify or remove the structure(s).

D. ____ I have consulted with the appropriate municipal/land-use authority and have not obtained their concurrence.

Comments:

"I _____ (the applicant) have complied with the requirements of the consultation process. I understand that omitted or false information could result in the issuance of the radio licence being delayed, refused or, where a licence has been issued, revoked."

_____	_____	_____
Applicant's signature	Print name and title	Date

Annex C

MINIMUM SAFE DISTANCE CALCULATIONS FOR NON-IONIZING RADIATION IN ACCORDANCE WITH SAFETY CODE 6 (for the General Public)

The document entitled *Limits of Exposure to Radiofrequency Fields at Frequencies from 10 kHz to 300 GHz (Safety Code 6)*, issue EHD -TR-160, published in 1991, is one of a series of safety codes prepared by the Bureau of Radiation and Medical Devices, Health and Welfare Canada, to set out requirements for the safe use of radiation emitting devices.

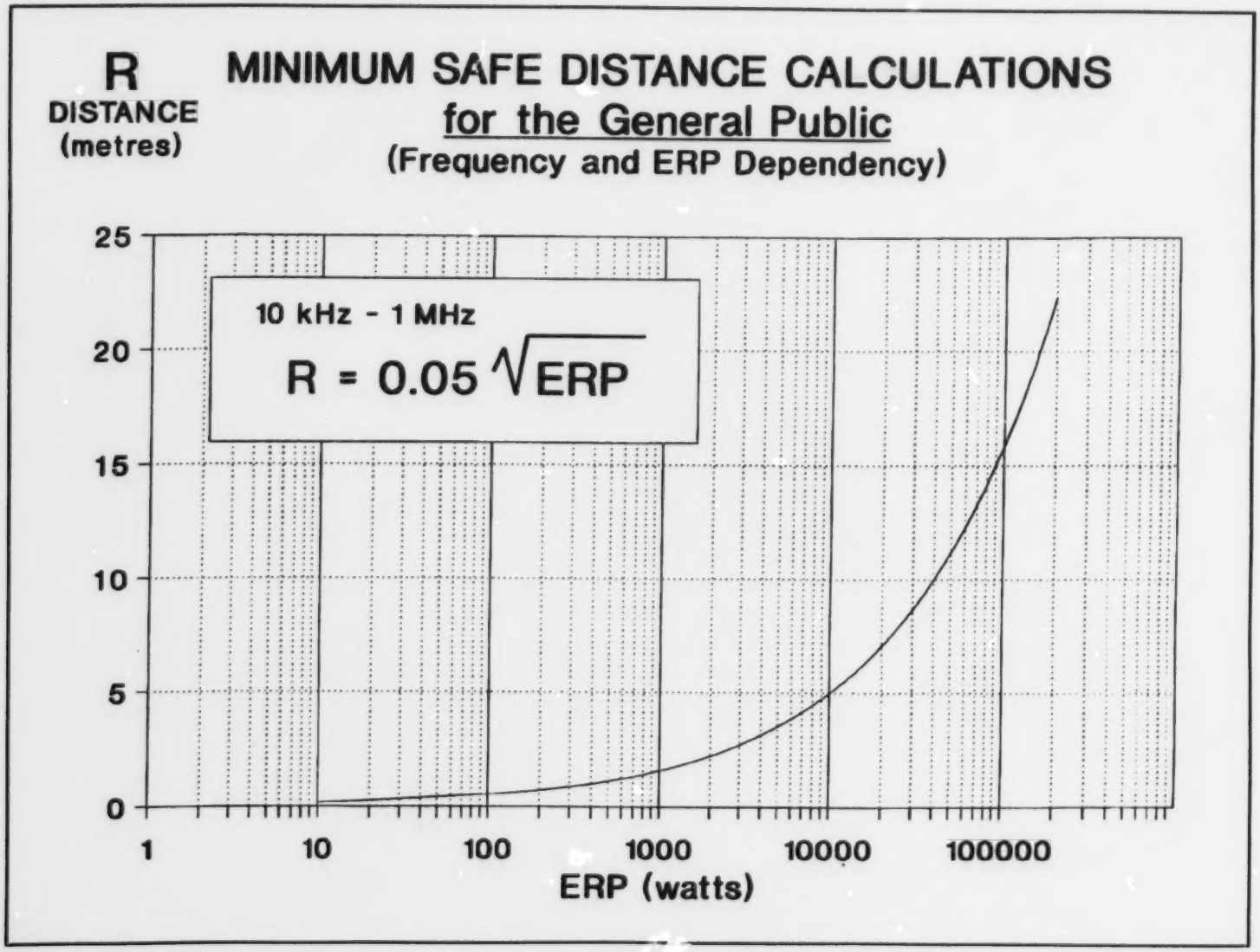
The charts contained in this annex are provided as an aid to those submitting applications for a radio station licence.

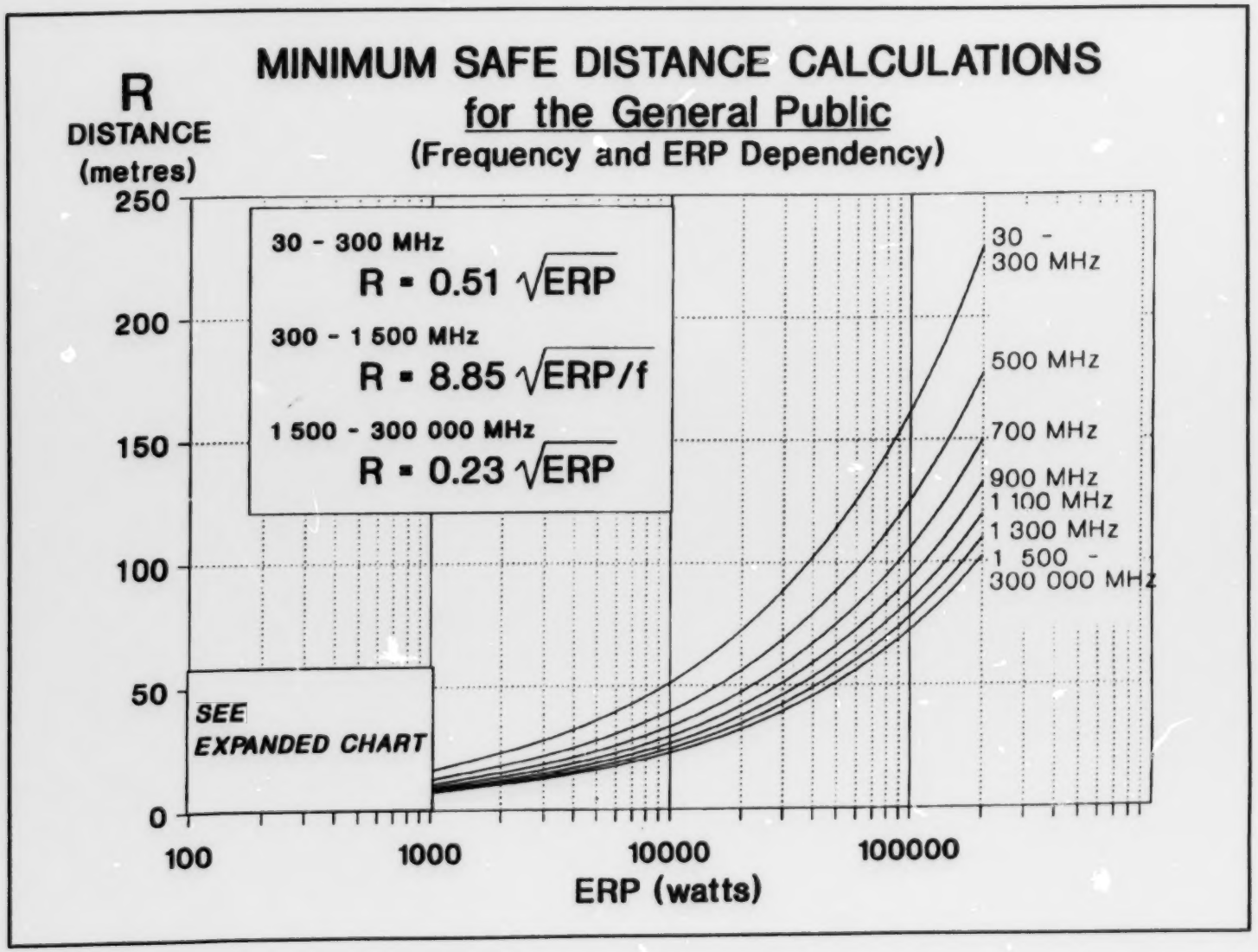
Because many technical parameters associated with a radio station are unknown or not easily available to many radio station applicants, the following charts use the maximum values for certain radio system technical parameters and ensure that the maximum possible levels of non-ionizing radiation are reflected for the respective radio stations.

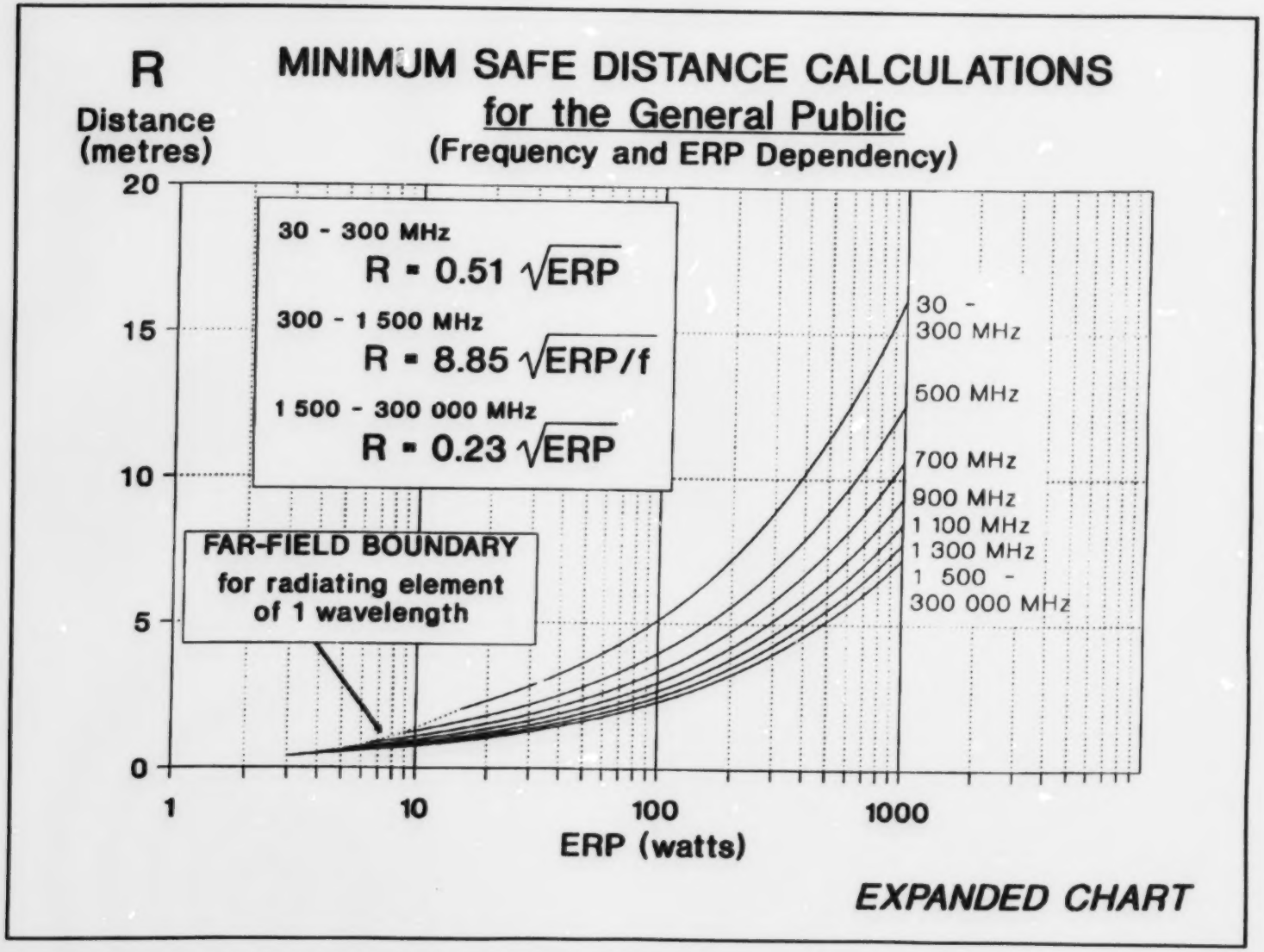
In the event that the levels calculated for a proposed radio installation approach or exceed Safety Code 6 non-ionizing radiation level limits, applicants may consult with their district office concerning the information required for more detailed calculations of the predicted levels of non-ionizing radiation. These calculations will involve the use of the actual radio station technical parameters such as: the direction of the beam; the proximity and elevation of a person with respect to the radiated beam; the orientation of the antenna; ground reflections; transmitter duty cycle and any other parameters which have a direct effect on the levels of non-ionizing radiation. Normally, the calculation of predicted non-ionizing radiation levels using the actual values will result in much lower levels and reduced minimum safe distances. This procedure will ensure that in the interest of public safety, all proposed radio installations will meet Safety Code 6 without unduly increasing the complexity of applying for a radio station licence.

When minimum safe distances are established for the radio system, it is the responsibility of the radio station licensee to ensure that the general public does not have access to the area within the minimum safe distance. The minimum safe distance is the distance measured from the transmitter antenna itself and not the antenna tower or support structure.

The following charts have been included to simplify minimum safe distance calculations for the frequency range 10 kHz to 300,000 MHz.


R
DISTANCE
(metres)
MINIMUM SAFE DISTANCE CALCULATIONS
for the General Public
(Frequency and ERP Dependency)
10 kHz - 1 MHz
R = 0.05 √ERP
25
20
15
10
5
0
1
10
100
1000
10000
100000
ERP (watts)


MINIMUM SAFE DISTANCE CALCULATIONS
for the General Public
(Frequency and ERP Dependency)
R
DISTANCE
(metres)
250
200
150
100
50
0
30 - 300 MHz
R = 0.51 √ERP
300 - 1 500 MHz
R = 8.85 √ERP/f
1 500 - 300 000 MHz
R = 0.23 √ERP
SEE
EXPANDED CHART
30 - 300 MHz
500 MHz
700 MHz
900 MHz
1 100 MHz
1 300 MHz
1 500 - 300 000 MHz
100
1000
10000
100000
ERP (watts)


R
MINIMUM SAFE DISTANCE CALCULATIONS
for the General Public
(Frequency and ERP Dependency)
Distance (metres)
20
15
10
5
0
30 - 300 MHz
R = 0.51 √ERP
300 - 1 500 MHz
R = 8.85 √ERP/f
1 500 - 300 000 MHz
R = 0.23 √ERP
FAR-FIELD BOUNDARY
for radiating element of 1 wavelength
30 - 300 MHz
500 MHz
700 MHz
900 MHz
1 100 MHz
1 300 MHz
1 500 - 300 000 MHz
1
10
100
1000
ERP (watts)
EXPANDED CHART

Annex D

RADIO LICENCE APPLICATION SUPPLEMENT – PRELIMINARY ENVIRONMENTAL INFORMATION

All applicants for land, coast and earth stations shall complete this form and submit it with the application form.

	Yes	No
1. The ERP of a single transmitting antenna or the cumulative ERP of a multi-coupled site exceeds 200 watts and/or the general public may be located within 6 metres of the transmitting antenna. (See **Annex C.**)		
2. The station or its construction will be located in, or will affect designated wildlife areas (national and provincial parks, ecological reserves and identified ecologically sensitive areas).		
3. The station will be located in or nearby culturally sensitive areas (aboriginal burial grounds, historical sites, etc.).		
4. The station will interfere with migratory patterns, e.g. birds, caribou, etc.		

Comments

If the answer to any of the above is "yes", please provide any additional information that will expedite the processing of your application.

Applicant's signature_____ Date_____